



Saskatchewan
Ministry of
Agriculture

CROP PRODUCTION NEWS

Volume 30, No. 7

August 15, 2008

PRODUCTION

Editor's Comments

Ray McVicar, Crop Development Branch (ray.mcvicar@gov.sk.ca)

Thunderstorms mixed with sunshine dominated much of our weather across the grain belt over the past two weeks, allowing some plant diseases to remain active longer than usual. The wheat midge control season has passed, but, with prices remaining higher than past years, it is very important to continue to check the crop for other threats.

Harvest has begun in the south-western portion of the province. For more information on the progress of the 2008 crop, consult Saskatchewan Agriculture's *Weekly Crop Report* at: www.agriculture.gov.sk.ca/Crop-Report

The Bertha armyworm risk map has changed over the past few weeks, with more potential hot-spots showing up. Check the *Insect Pest Survey Update* article in this edition of the CPN for more information.

If you are applying a crop protection product this time of year, REMEMBER TO FOLLOW THE PRE-HARVEST INTERVAL GUIDELINES. Refer to the crop protection product label or the product information in the [2008 Guide to Crop Protection](#) for more information on specific intervals. Pre-harvest glyphosate should not be applied to some crops destined for planting seed, as the germination and vigour levels can be negatively affected.

NOTE: Throughout this document, you will see that some publications are in blue font and underlined, indicating links to website information. If you are reading this off your computer screen, press the CTRL button and click your cursor on the link to take you directly to the website. ☺

Crop Production News is a biweekly publication prepared primarily by provincial specialists with the Crop Development Branch of the Saskatchewan Ministry of Agriculture. The newsletter includes a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

Please do not use any of these articles for any other purpose without first asking the author's permission.

If you wish to be added to or removed from our mailing list, forward your request by email to: sean.miller@gov.sk.ca

INSIDE

Crop Protection Lab Update	2
Winter Wheat Planting	3
Pulse Crop Harvest in 2008	4
Dutch Elm Disease Summary	6
Fertilizing Winter Cereals	7
Harvesting Food-Grade Flax to Obtain a Premium Price	8
Insect Pest Survey Update	9

Crop Protection Lab Update

By Grant Holzgang, Supervisor, Crop Protection Laboratory

There have been several submissions of cereals with Fusarium head blight infections. The lab is also in the initial stages of assessing the material from the annual Fusarium head blight survey. Given the higher-than-usual number of client submissions and initial examinations, it appears that the level of the disease is higher this year than it has been in recent years. In fact, there may be fields in which the crop cannot be used as feed. This is a concern since one per cent Fusarium by weight in barley reduces it to Sample Grade, and for some markets the tolerance level is zero. Depending on the type of wheat, Grade #1 has a maximum tolerance of 0.25-2 per cent Fusarium; #2 is 0.5-2 per cent; #3 is two per cent; and greater than five per cent reduces it to Sample Grade. For more detailed information on grade and cereal type, refer to the Canadian Grain Commission's web site at: www.grainscanada.gc.ca.



Fusarium head blight infection.
Source: Saskatchewan Agriculture.

Symptoms of Fusarium head blight

In wheat, spikelet discolouration is seen as brownish-yellow to orange to tan or very dark brown. In barley, the discolouration is predominantly dark brown to almost black. In oats, the discolouration is closer to that of wheat but may not be as noticeable as the outer glumes may not be symptomatic (particularly at early stages). Mature or advanced cases in cereals often show orange to reddish spore-forming bodies between the kernel and the glume. Confirmation of the actual species can only be made by culturing, and it may take more than a month for all morphological features to become apparent.

Herbicide Resistance Screening

Weed samples for herbicide resistance testing will be gathered soon by growers, crop protection companies and agri-business representatives. It is important to submit samples that are in good condition. The Crop Protection Lab requests 1,000 seeds per herbicide group. It is imperative to collect fully mature, disease-free seed that has not been treated with any pre-harvest weed control herbicide. Samples should be dried before they are submitted. Refer to the Saskatchewan Agriculture website under "Forms" and then *Crop Protection Diagnostic Form*, which will provide additional information on submitting samples.

In other recent submissions, durum wheat is showing dicamba herbicide injury due to application outside the narrow staging requirements. ☼

Winter Wheat Planting

By Blaine Recksiedler, Provincial Specialist, Cereal Crops

Winter wheat is becoming increasingly popular on the Canadian Prairies. Approximately 1.5 million acres were seeded in the fall of 2007. This represents a six-fold increase in the last 10 years.

Successful producers report numerous benefits to growing winter wheat compared to spring wheat, including: improved weed control, increased economic returns thanks to higher yields and lower pesticide costs, and more efficient use of spring soil moisture and precipitation. Planting in the fall also contributes to efficient use of equipment and workload distribution, and to wildlife habitat conservation. The earlier maturity of a winter crop also reduces the risks of Fusarium head blight and wheat midge.

Improvements in variety characteristics and marketing opportunities (i.e. food, feed and ethanol markets), as well as improved agronomic practices, have led to more producers trying winter wheat.

For a list of varieties that are recommended for production in Saskatchewan, with corresponding yield and agronomic information, visit the *Varieties of Grain Crops* publication on the Saskatchewan Agriculture website at:
www.agriculture.gov.sk.ca/Default.aspx?DN=a9768c78-f767-4a1f-a9c4-507a9dae074b.

The most popular winter wheat varieties grown in Saskatchewan are: CDC Buteo (44.6 per cent), CDC Raptor (16.9 per cent), CDC Clair (11.8 per cent), AC Bellatrix (9.4 per cent) and CDC Falcon (5.5 per cent).

The following are some successful planting strategies for winter wheat production.

Planning

- Select a variety that offers the agronomic package and marketing opportunities best suited to your situation.
- Seed into suitable stubble in late August to early September. To reduce the risk of wheat streak mosaic virus, winter wheat should not be sown before nearby spring wheat or barley crops are mature. A seven- to 10-day delay is recommended to avoid the 'green bridge' that is necessary for the transmission of the virus between host plants.

(Continued on page 4)

Winter Wheat Planting (Continued from page 3)

- Manage the previous crop stubble to trap snow to insulate the over-wintering crown tissue. Cut the spring crop as high as possible and spread the straw thoroughly.
- Winter wheat seeding usually occurs during breaks in harvest, so seed and fertilizer should be sourced well before then.

Seeding

- Equipment – over-wintering of crown tissue is most successful in a zero-tillage production system. Equipment should be capable of seeding shallow, at a consistent depth, and with minimal stubble disturbance.
- Seeding date – development of healthy vigorous plants before freeze-up will improve the rate of winter survival. Three or four true leaves, plus early first tiller stage is ideal. The ideal window for seeding in Saskatchewan is August 25 to September 10. Seeding too early results in excessive growth in the fall, loss of winter hardiness and increased risk of winter injury. Seeding too late can result in poorly established plants with less winter survival potential.
- Seeding depth – preferably, winter wheat should be seeded at a depth of less than 2.5 cm into a firm, moist seedbed. Seeding deeper can result in delayed emergence, spindly plants and winter injury. Shallow-seeded winter wheat will also benefit from small amounts of rain.☼

Pulse Crop Harvest in 2008

By Dale Risula, Provincial Specialist, Specialty Crops

Predicting harvest weather is not easy to do, especially while planning next week's work. Sometimes even predicting tomorrow's weather can be difficult. We know that many crops are developing later than normal this year. All this uncertainty makes it difficult to know how and when to prepare for harvest, but here are some reminders to help get ready.

Pulse crops can be swathed and threshed or straight-combined. The choice depends on machinery availability, crop type, shattering resistance, stage of maturity and uniformity of maturity.

Chickpea quality is better if straight-combined rather than swathed because it does not cure well in the swath. Earth tag can

(Continued on page 5)



Pea harvest, 2008
Source: Saskatchewan Agriculture

Pulse Crop Harvest in 2008 (Continued from page 4)

also be prevalent in swathed crops, potentially increasing fungal and bacterial infection on the seed. Whether straight-combined or swathed, if chickpea is cut or desiccated too early, green seed may be retained in the sample.

It is usually better to swath than straight-combine dry bean due to uneven maturation and potentially high shattering losses. If straight-combining is being considered, ensuring even maturity and high pod clearance is imperative. Quality loss is negligible on immature bean lying in the swath.

Grower preference often determines the best method to harvest lentil crops; however, if they are left to mature and dry in the field too long, shattering losses can occur. High temperatures can also cause discolouration of green lentil in the top of the swath.

Similarly, pea crops can be swathed or straight-combined. Green pea is often swathed or desiccated early to help preserve green colour. Unpredictable rain showers and bright sunshine can cause bleaching of green pea. Yellow and feed peas can be swathed prior to maturity or straight-combined when mature. Yellow pea may remain green if it matures under very high temperatures.

Because fababean is susceptible to shattering, it is best swathed and combined when dry. As well, no registered desiccants are available for fababean.

Walking your fields and examining your crops closely will help you determine if the crop is ready for harvest. See *When to Harvest Specialty Crops* on the Saskatchewan Agriculture website for guidelines on proper timing. Also included in the fact sheet are grain moisture content levels for harvesting and storing pulse crops.

Registered products available to facilitate harvesting pulse crops include Reglone, Liberty and glyphosate. Each product differs in its action and is designed for a specific purpose. Reglone kills plant tissues on contact, thereby speeding up drying. It is a true desiccant. Glyphosate is absorbed and translocated through the plant to ultimately kill it. Reglone activity is direct and therefore much quicker than glyphosate, while glyphosate provides better control of perennial weeds. Liberty is registered for desiccation of lentil. The speed of dry-down with Liberty is usually somewhere between that of Reglone and glyphosate. **Check product labels for the crop-specific information before applying.** Remember, pre-harvest treatments do not accelerate maturity of the crop, but will kill and dry down the crop at any growth stage. Producers must ensure that the crop has reached the acceptable level of maturity before applying them.

(Continued on page 6)

Pulse Crop Harvest in 2008

(Continued from page 5)

Pulse crops intended for use as seed for planting should not be treated with glyphosate. If they are, the result may be poor seed germination and seedling damage when affected seeds are planted.

When daytime temperatures are very high and night temperatures low, the result is often dew. By swathing at night or early morning, you may be able to take advantage of dew to minimize crop losses due to shattering.

Low-cut pulses like pea and lentil may be at risk from wind damage. Anchoring the swath into the stubble with a roller may help reduce these losses. Unfortunately, under hot and dry conditions, this may increase shattering losses.

Because pulse crops grow low, and often lodge and tangle, they can be difficult to harvest. Specialized equipment greatly improves the ease and efficiency of harvest. If the crop is swathed, a pick-up reel will move plant material off the cutter bar. Lifter guards on a swather allow closer cutting to the soil surface. The pick-up reels and vine lifters should be adjusted to provide maximum lifting action. The reel speed should match the ground speed.

In very high temperatures, pulses should be aerated as soon as possible. Larger pulse seeds are more susceptible to sweating while in storage, and moisture migration and accumulation can occur quickly. Reduce stored grain temperatures to 15° C or less, and moisture content to 14 per cent or lower as soon as possible. ⚙

Dutch Elm Disease Summary

By Brianna Brown, Dutch Elm Disease Technician

The Crop Protection Lab received its first elm sample of 2008 on June 13, and samples have arrived steadily since then. As of August 7, the lab has received 190 samples, of which 121 were positive. At this time last year, the lab had received 202 samples, of which 126 were positive. The numbers have remained relatively constant, declining slightly with no new areas of infection, due to the active surveillance and prevention efforts throughout the province.



Infected elm tree.
Source: Saskatchewan Agriculture

One of the measures being taken to prevent the spread of Dutch elm disease is the ban on pruning from April 1 to August 31. This ban is in place because, during this period, the

(Continued on page 7)

Dutch elm disease in Saskatchewan (Continued from page 6)

bark beetles are most active and are attracted to the smell of freshly cut wood. It is also illegal to transport elm wood of any kind, except to a proper disposal site, to prevent possible spread to new areas.

Bioforest, the company contracted by Saskatchewan Environment to look for the disease, is in the midst of its second round of surveillance within the designated survey communities of the province.

Indian Head and its buffer region continues to be affected by Dutch elm disease, having reported 16 positive samples compared with last year's 13. Fort Qu'Appelle and its buffer zone has lost 13 elms, a decline from 2007 when it lost 16. Lumsden had six confirmed cases this year, down from 15 in 2007. The number of Dutch elm disease cases in Regina has also declined since last year. Eleven trees were removed in 2007, and five have been removed so far this year, including an infection in Wascana Centre, which had been free of Dutch elm disease for more than 25 years. Saskatoon remains free of Dutch elm disease.

If you have any questions, want more information, or know of an elm that may be infected (see photo on preceding page), call the Dutch elm disease hotline at 1-800-SASKELM (1-800-727-5356). ☼

Fertilizing Winter Cereals

By Ken Panchuk, Provincial Specialist, Soils

During the last week of August and into the first two weeks of September, producers will be planting winter cereals. The hallmark of establishing a winter cereal crop is to seed shallow into standing stubble (right), whether there is good seedbed moisture or not.

Producers are encouraged to apply fertilizer with, or near the seed to provide starter fertilizer nutrients nitrogen and phosphorus. Phosphorus is needed to grow healthy seedlings prior to freeze-up to optimize winter hardiness of the crop.



Winter wheat in cereal stubble.
Source: Saskatchewan Agriculture

Winter cereals need about 20 pounds of nitrogen per acre for fall growth, so some nitrogen can be banded in the seed row with the phosphate fertilizer to meet this need.

(Continued on page 8)

Fertilizing Winter Cereals

(Continued from page 7)

Be careful to not exceed the safe rates of urea-nitrogen placed with the seed. If seedbed moisture is not good, reduce the rate of seed-placed nitrogen by at least 50 per cent. Seeding winter cereals usually takes place under dry seedbed conditions, so it is wise to add only a small amount of nitrogen with the seed.

Higher rates of seed-placed nitrogen increase the risk of the salt-effect that delays germination, reduces emergence and increases the risk of winter injury. If higher rates of nitrogen are to be applied, consider mid-row or side-banding to keep the nitrogen away from the seed.

Polycoated urea offers another option for applying nitrogen for winter cereal production. Follow product instructions and do not exceed the safe rate of urea in the seed row. Polycoated urea can also be applied in a side-band or mid-row-band position. Polycoated urea holds the nitrogen in the urea form longer, minimizing the amount converted to the nitrate form before winter freeze-up. Under wet soil conditions during spring thaw, nitrate-nitrogen converts easily to nitrous oxide or gaseous N₂ and can be lost.

Nitrogen is best applied in the early spring after a winter survival assessment is completed. If a good winter cereal stand is present, apply nitrogen fertilizer at rates appropriate for the desired target yield, based on subsoil moisture and expected growing season precipitation. In-crop coulter banding can be used to apply nitrogen in the spring.

Remember, in order to establish a good winter cereal crop, the main focus should be on seeding and keeping as much stubble standing as possible. ⚙

Harvesting Food-Grade Flax to Obtain a Premium Price

By Venkata Vakulabharanam, Provincial Specialist, Oilseed Crops

As the 2008 harvest season approaches, flax growers should give extra attention to their harvest and post-harvest practices. Processors pay premiums for food-grade flax when it meets their quality standards.

Last spring, due to low supply, processors paid as much as a \$4-per-bushel premium over the

(Continued on page 9)

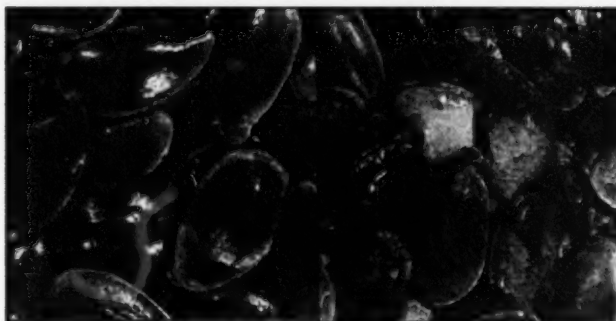


Figure 1: Sample of No.1 Canada flax seed.
Source: Canadian Grain Commission.

Figure 2: Sample of No.2 Canada flax seed. This seed shows the rime or scabbing which occurs in a year with wet harvest.
Source: Canadian Grain Commission.

Harvesting Food Grade Flax to Obtain a Premium Price (Continued from page 8)

elevator price for good quality food-grade flax. Usually, these premiums range from \$0.50 to \$1 per bushel.

There is a strong demand for food-grade flax in Europe and the United States. To be accepted as premium quality, food-grade flax must exceed Canadian Grain Commission standards (Figures 1, 2, and 3). In general, the seed should have good uniformity and contain no inseparable foreign seeds such as lady's thumb, black medic, smart weed or wild buckwheat. The seed moisture content should be nine to 9.5 per cent or lower. The sample should be free of green and cracked seeds, and should contain more than 41 per cent oil. Food-grade flax has to be 99.9 per cent pure. Most of the flax varieties grown in Western Canada are suitable for food use. Flax used in the pet food market follows similar grading standards as flax for human consumption.



Figure 3: Sample of heated to bin-burnt flax seed.
Source: Canadian Grain Commission.

Here are some useful tips to follow to achieve food-grade standards. Generally, flax that was seeded early into a clean field has a better chance of making food grade. Use only registered crop protection products. Do not desiccate the crop because desiccated flax generally cannot qualify for food-grade status. Keep lower quality flax that has been grown in weedy or flooded areas separate from the high quality flax intended for the human food market. To avoid earth tag, some farmers roll their seedbed with a landroller and straight-combine. To obtain food-grade flax premiums, do not harvest too early when it is green, or too late when it is weathered. Pay attention to weather conditions as bolls soak up rainwater and produce dark kernels. Clean trucks, augers and bins thoroughly. Be prepared to aerate flax to bring the seed moisture content down. Finally, store food-grade flax in clean, tightly sealed steel bins to avoid contamination by birds and rodents. Flax that is left in the field over winter is not likely suitable for the human food market.

Remember, consumers buy food-grade flax based on its appearance and processors treat the sample as a ready-to-eat and clean food. ☼

Insect Pest Survey Update

By Scott Hartley, Provincial Specialist, Insects and Vertebrate Pests

Bertha Armyworm - August 2008

The first week of August marked the end of the 2008 Bertha Armyworm Monitoring Program (adult moths), with attention shifting to in-field monitoring for larval

(Continued on page 10)

Insect Pest Survey Update (Continued from page 9)

infestations. Although the overall risk for the province appears to be declining, the Bertha armyworm map shows increased moth counts in a few concentrated, higher risk areas.

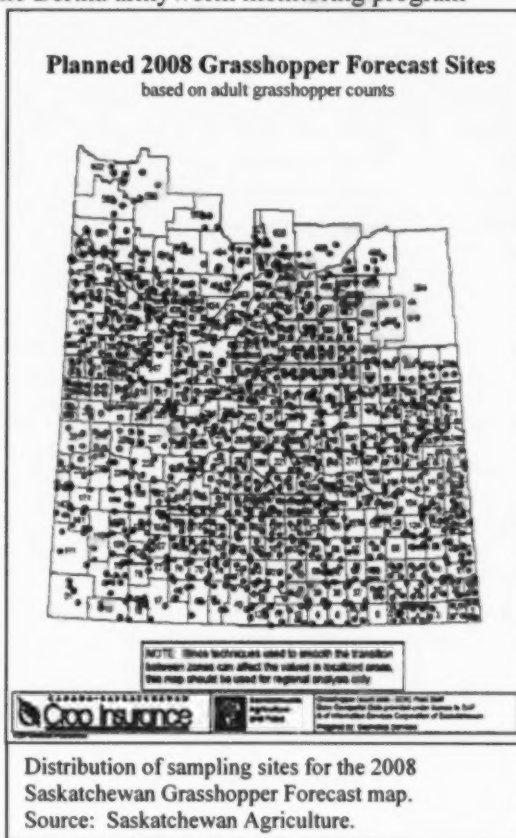
The highest counts were from traps located in RM 487 near Nipawin and RM 185 near Lemberg. Areas east of Saskatoon and north and east of Regina also recorded higher numbers of Bertha armyworm moths.

It is important to keep in mind that, although the Bertha armyworm monitoring program and related map are based on actual cumulative moth counts and provide a reasonable estimate of risk, actual larval counts can vary considerably in the field. Climatic conditions, predators, parasites and disease can all affect armyworm populations.

Canola Council of Canada agronomists reported larval infestations in some locations within the higher risk zones by the first week in August. The peak emergence of the adult armyworm moths was in mid-July. This suggests the majority of the larvae are still in the early stages of development, and will cause more serious damage in the next few weeks as they grow and populations increase.

Crop development varies greatly across the province. Greener, later maturing crops will generally be more attractive to armyworm larvae than more advanced crops. As crops near harvest, it is important to consider the pre-harvest intervals associated with the various insecticides. Keep in mind that the higher value of canola in 2008 should be considered and economic thresholds lowered when evaluating infestations.

The updated Bertha armyworm risk map can be viewed on the Saskatchewan Agriculture website at: www.agriculture.gov.sk.ca/ (Production/ Crops – Insects).



(Continued on page 11)

Insect Pest Survey Update
(Continued from page 10)

2008 Grasshopper Survey

Saskatchewan Crop Insurance personnel are conducting the grasshopper survey for 2008. Adult grasshoppers are counted, as they provide a good measure of the potential for mating and egg-laying. The survey includes observations from more than 1,000 sites in the province (preceding page). Results of the data collected will be mapped and posted on the Saskatchewan Agriculture website.

Although grasshopper numbers have been relatively low for most of the province, some areas have reported economic infestations. The majority of the control measures taken in 2008 have been in lentil crops, where the economic threshold is only two grasshoppers per square metre. ☼

The *Crop Production News* is a regular publication of the
Crop Development Branch, Saskatchewan Ministry of Agriculture.
Editor: Ray McVicar, Manager – Production Technology Section; Phone: (306) 787-8733;
e-mail ray.mcvicar@gov.sk.ca